

Figure 1

Video Repeater/Sink Device
Authenticates to upstream Video
Source/Repeater Device

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When Ready, Video Repeater Device
Authenticates to upstream Video
Source/Repeater Device

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Figure 2

Upstream Device		Downstream Device
Video Source/Repeater Device ($A_{k_{sv}}$)		Video Repeater/Sink Device ($B_{k_{sv}}$)
Generate A_n	$A_n, A_{k_{sv}}$ → ← $B_{k_{sv}}, \text{Repeater}$	
Generate K_m ($A_{key_{sv}}, B_{k_{sv}}$) Generate K_s, M_0, R_0 ($K_m, \text{Repeater} \parallel A_n$)		Generate K_m ($B_{key}, A_{k_{sv}}, B_{k_{sv}}$) Generate K_s', M_0', R_0' ($K_m', \text{Repeater} \parallel A_n$)
Determine if $R_0 = R_0'$	← R_0	

Figure 3a

Upstream Device		Downstream Device
Video Source/Repeater Device		Video Repeater Device
Poll Ready	← Ready ← KSV list, V' , Topology	Assemble KSV list $V' = \text{SHA-1}(\text{KSV list} \parallel \text{Topology} \parallel M_0')$
$V = \text{SHA-1}(\text{KSV list} \parallel \text{Topology} \parallel M_0')$ Determine if $V = V'$		

Figure 3b

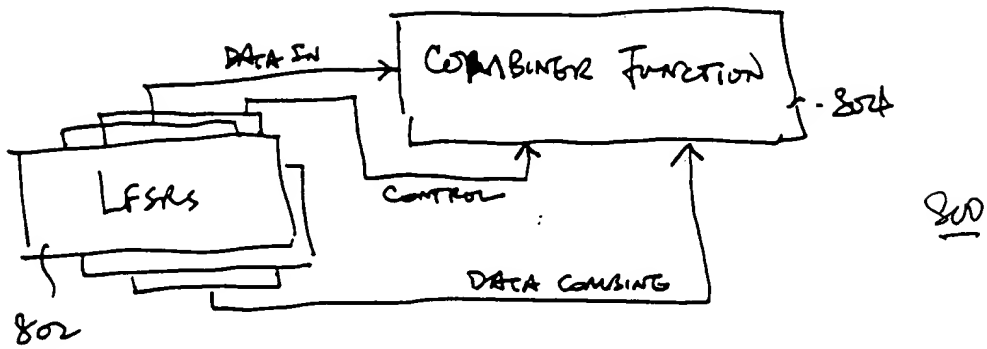


Fig. 4a

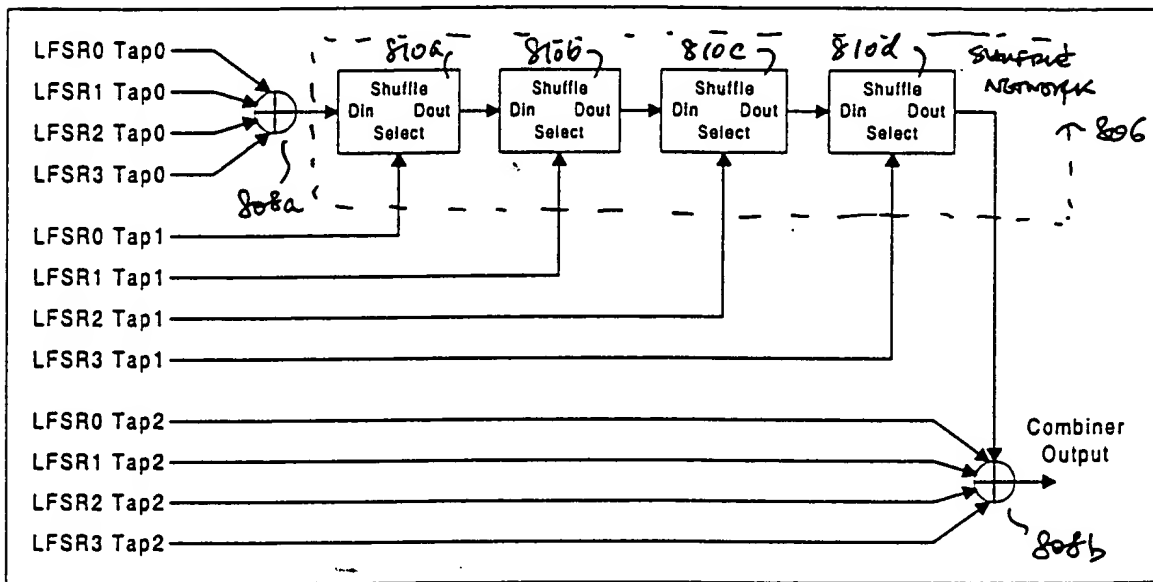


Fig. 4b

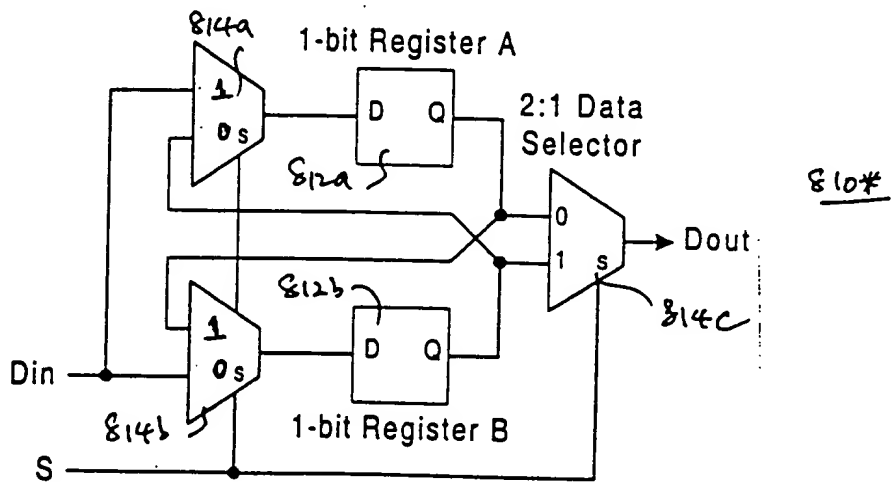


Fig. 4c